

TITLE OF THE INVENTION

METHOD OF MAKING YARN SOFTER AND SMOOTHER AND THE PRODUCT  
THEREOF

CROSS-REFERENCE TO RELATED APPLICATIONS

Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH  
OR DEVELOPMENT

Not Applicable

REFERENCE TO A MICROFICHE APPENDIX

Not Applicable

BACKGROUND OF THE INVENTION

Field of the Invention

This invention pertains to a method of improving the comfort, softness, and texture of textile products in both semi-finished and finished forms and the product thereof.

## BRIEF SUMMARY OF THE INVENTION

The present invention resides in a method of softening textile fibers and the softened textile fibers made by this method. The method of softening textile fibers includes the following steps: Blending an Aloe Vera solution capable of absorption directly into textile fibers. Impregnating textile fibers with said Aloe Vera solution. Drying said impregnated textile fibers.

The details of the method of softening textile fibers include the following steps: Blending an Aloe Vera solution suitable for improving the comfort, softness, and texture of textile fibers, and capable of absorption directly into textile fibers. Applying a coating of the Aloe Vera solution onto the outer surface of a roller. Running textile fibers over the outer surface of the roller and through the coating of Aloe Vera solution. Impregnating the textile fibers with Aloe Vera solution. Drying the impregnated textile fibers.

A variation of the method of softening textile fibers includes the further steps of: Filling a reservoir with the Aloe Vera solution. Pumping the Aloe Vera solution from the reservoir through a tube and through a means for application. Applying a coating of the Aloe Vera solution onto the outer surface of the roller using a means for application.

Another variation of the method of softening textile fibers includes the further steps of: Varying the volumetric flow rate of the Aloe Vera solution passing through the means for application. Metering the volumetric application of the Aloe Vera solution so as to impregnate the textile fibers and derive consistent quality and not impair the conversion of the textile fiber into yarn.

Yet another variation of the method of softening textile fibers includes the further steps of: Applying a coating of the Aloe Vera solution onto the outer surface of an upper roller using the means for application. Locating a lower roller below the upper roller to sandwich the textile fibers passing therebetween in constant contact with both rollers. Propelling the upper roller and the lower roller to drive the textile fibers forward.

Still another variation of the method of softening textile fibers uses a nozzle as the means for application.

A further variation of the method of softening textile fibers includes the step of: Driving the textile fibers forward between the upper and the lower roller and into a storage container.

A still further variation of the method of softening textile fibers includes the step of: Incorporating the method of softening textile fibers as part of a fiber stretch break machine.

Another further variation of the method of softening textile fibers includes the step of: Locating the method of softening textile fibers on a fiber stretch break machine immediately after the continuous filament textile fibers have been stretch broken into smaller, discrete fiber lengths.

In still another variation of the method of softening textile fibers, the textile fibers can be made from acrylic, wool, or cotton fibers.

In yet another variation of the method of softening textile fibers, the impregnated textile fibers are dried at ambient air temperature.

The present invention also resides in a method of softening yarn and the product thereof. The method of softening yarn includes the following steps: Blending an Aloe

Vera solution capable of absorption directly into a yarn. Impregnating yarn with said Aloe Vera solution. Drying said impregnated yarn.

The details of the method of softening yarn include the following steps: Blending an Aloe Vera solution suitable for improving the comfort, softness, and texture of yarn, and capable of absorption directly into yarn. Applying a coating of the Aloe Vera solution onto the outer surface of a roller. Running the yarn over the outer surface of the roller and through the coating of the Aloe Vera solution. Impregnating the yarn with the Aloe Vera solution. Drying the impregnated yarn.

A variation of the method of softening yarn includes the steps of: Filling a reservoir with the Aloe Vera solution. Placing part of the outer surface of the roller into the Aloe Vera solution in the reservoir. Revolving the roller to apply a coating of the Aloe Vera solution on the outer surface of the roller. Driving the yarn forward at a rate that promotes optimal yarn impregnation. Replenishing constantly the coating of the Aloe Vera solution on the outer surface of the roller.

Another variation of the method of softening yarn includes the step of: Maintaining a constant amount of the Aloe Vera solution in the reservoir during the application procedure.

Yet another variation of the method of softening yarn includes the step of: Varying the propelling speed of the roller to optimize the absorption rate of the Aloe Vera solution into each type of yarn.

Yet a further variation of the method of softening yarn includes the step of: Locating the method of softening textile yarn as the last operation at the end of the



**Figure 2** is an orthogonal view of the method of softening yarn.

## DETAILED DESCRIPTION

As shown in **Figure 1**, the present invention resides in a method of softening textile fibers **14** and the softened textile fibers **18** made by this method. The method of softening textile fibers **14** includes the following steps: Blending an Aloe Vera solution **22** capable of absorption directly into textile fibers **14**. Impregnating textile fibers **14** with said Aloe Vera solution **22**. Drying said impregnated textile fibers **14**.

The details of the method of softening textile fibers **14** include the following steps: Blending an Aloe Vera solution **22** suitable for improving the comfort, softness, and texture of textile fibers **14**, and capable of absorption directly into textile fibers **14**. Applying a coating **20** of the Aloe Vera solution **22** onto the outer surface **46** of a roller **26**. Running textile fibers **14** over the outer surface **46** of the roller **26** and through the coating **20** of Aloe Vera solution **22**. Impregnating the textile fibers **14** with Aloe Vera solution **22**. Drying the impregnated textile fibers **14**.

A variation of the method of softening textile fibers **14** includes the further steps of: Filling a reservoir **30** with the Aloe Vera solution **22**. Pumping the Aloe Vera solution **22** from the reservoir **30** through a tube **38** and through a means for application **42**. Applying a coating **20** of the Aloe Vera solution **22** onto the outer surface **46** of the roller **26** using the means for application **42**.

Another variation of the method of softening textile fibers **14** includes the further steps of: Varying the volumetric flow rate of the Aloe Vera solution **22** passing through the means for application **42**. Metering the volumetric application of the Aloe Vera solution **22** so as to impregnate the textile fibers **14** and derive consistent quality and not impair the conversion of the textile fibers **14** into yarn.

Yet another variation of the method of softening textile fibers 14 includes the further steps of: Applying a coating 20 of the Aloe Vera solution 22 onto the outer surface 46 of an upper roller 26 using the means for application 42. Locating a lower roller 54 below the upper roller 26 to sandwich the textile fibers 14 passing therebetween in constant contact with both rollers. Propelling the upper roller 26 and the lower roller 54 to drive the textile fibers 14 forward.

Still another variation of the method of softening textile fibers 14 uses a nozzle 58 as the means for application 42.

A further variation of the method of softening textile fibers 14 includes the step of: Driving the textile fibers 14 forward between the upper 26 and the lower roller 54 and into a storage container.

A still further variation of the method of softening textile fibers 14 includes the step of: Incorporating the method of softening textile fibers 14 as part of a fiber stretch break machine.

Another further variation of the method of softening textile fibers 14 includes the step of: Locating the method of softening textile fibers 14 on a fiber stretch break machine immediately after the continuous filament textile fibers 14 have been stretch broken into smaller, discrete fiber lengths.

In still another variation of the method of softening textile fibers 14, the textile fibers 14 can be made from acrylic, wool, or cotton fibers.

In yet another variation of the method of softening textile fibers 14, the impregnated textile fibers 14 are dried at ambient air temperature.



As shown in **Figure 2**, the present invention also resides in a method of softening yarn **114** and the product thereof. The method of softening yarn **114** includes the following steps: Blending an Aloe Vera solution **118** capable of absorption directly into a yarn **114**. Impregnating yarn **114** with said Aloe Vera solution **118**. Drying said impregnated yarn **122**.

The details of the method of softening yarn **114** include the following steps: Blending an Aloe Vera solution **118** suitable for improving the comfort, softness, and texture of yarn **114**, and capable of absorption directly into yarn **114**. Applying a coating **126** of the Aloe Vera solution **118** onto the outer surface **130** of a roller **134**. Running the yarn **114** over the outer surface **130** of a roller **134** and through the coating **126** of the Aloe Vera solution **118**. Impregnating the yarn **114** with the Aloe Vera solution **118**. Drying the impregnated yarn **122**.

A variation of the method of softening yarn **114** includes the steps of: Filling a reservoir **138** with the Aloe Vera solution **118**. Placing part of the outer surface **130** of a roller **134** into the Aloe Vera solution **118** in the reservoir **138**. Revolving the roller **134** to apply a coating **126** of the Aloe Vera solution **118** on the outer surface **130** of a roller **134**. Driving the yarn **114** forward at a rate that promotes optimal yarn **114** impregnation. Replenishing constantly the coating **126** of the Aloe Vera solution **118** on the outer surface **130** of a roller **134**.

Another variation of the method of softening yarn **114** includes the step of: Maintaining a constant amount of the Aloe Vera solution **118** in the reservoir **138** during the application procedure.

Yet another variation of the method of softening yarn 114 includes the step of:  
Varying the propelling speed of the roller 134 to optimize the absorption rate of the Aloe Vera solution 118 into each type of yarn 114.

Yet a further variation of the method of softening yarn 114 includes the step of:  
Locating the method of softening textile yarn 114 as the last operation at the end of the continuous steam bulker machine resulting in a uniformly consistent application of the Aloe Vera solution 118.

A further variation of the method of softening yarn 114 includes the step of:  
Locating an Aloe Vera solution 118 filled feeder bottle 146 above the reservoir 138 to gravity feed and consistently maintain the Aloe Vera solution 118 level in the reservoir 138.

In a variation of the method of softening yarn 114, the impregnated yarn 122 is dried at ambient air temperature.

In another variation of the method of softening yarn 114, the yarn 114 is made from acrylic, wool, or cotton fibers.

In yet another variation of the method of softening yarn 114, the yarn 114 is made from two plies, three plies, or four plies of twisted yarn fibers.